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Subject: Gary Land Development
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Attachments:

Subject: Gary Land Development Landfill;

CC: Anita Sherron; Laura Beth McKee

Document Title – E-Mail

Facility Name – Gary Land Deveopment

Gary, Lake County

Site Investigation #: 051133611

Following our conversation this AM, I'm provding this e-mail as clarification of the potential for the Gary Development Landfill to contaminate ground water within the Grand Calumet aquifer and nearby surface water of the Grand Calumet river.

Aerial photographs of the Gary Development Landfill show that the cap is eroding and water is ponding on the surface of the landfill. Since the permeability of compacted fly ash used as cover material for the cap probably ranges from 10^{-4} to 10^{-5} cm/sec (Tu and others, 2007), surface water continuously infiltrates the cap generating leachate.

As the unlined landfill extends 40 feet or more in depth to the top of the underlying till located at an elevation of approximately 550 ft above mean sea level, wastes within the landfill are certain to contact ground water of the surrounding shallow Calumet aquifer. This conclusion is based on the naturally high horizontal hydraulic conductivity of the aquifer reported to be as much as 17.9 ft/day (Cohen and others, 2002), and variable levels (584.56 to 581.98) of the water table recorded in USGS well C-5, and adjacent wells located 3000 feet west of the landfill. As Table 1 of my August 2010 memo shows, at low stage, ground water in contact with contaminants contained in the landfill will discharge towards

the river.

If you have any questions, or would like to discuss my evaluation further, please let me know.

Sincerely,
Bob Martin

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